

### **REMARKS/ARGUMENTS**

Claims 1, 3-14 and 21-22 are pending in the application. By this response, claims 1, 21, and 22 are amended. Support for the amendment to claim 1 can be found throughout the specification, specifically in paragraphs [0032] and [0035]. Claims 21 and 22 are amended solely to bring them into agreement with claim 1. Therefore, no new matter has been added and applicant respectfully requests allowance of the claims.

#### **Remarks regarding 35 U.S.C. § 102**

Claims 1 and 3 stand rejected under 35 USC § 102(b) as allegedly being anticipated by Nii et al. (USP 4,938,611). Applicant respectfully traverses the rejection.

The Examiner states that he “*finds readily apparent from a review of figure 11 that the bottom of the liner (which is element 6...) includes a hole in the bottom which the shaft passes through (as “bottom” is without a reference frame, either end of the liner could be the “bottom” as either end of the liner has a hole in it.*” As Applicant understands, the Examiner is taking the broad interpretation of the word “bottom” to mean one end of the liner. To clarify Applicant’s invention, Applicant has amended claim 1 to recite:

*a liner secured within the bore hole, wherein the liner includes a first end, and a second end, wherein the second end includes an inner surface having a hole formed there through;*

Therefore, claim 1 now clearly states that one end of the liner includes an inner surface. Applicant respectfully asserts that Nii does not teach or suggest a liner having an inner surface at one end thereof. As can be seen in Figure 11 of Nii, liner 6 is an open tubular structure without an inner surface at either end of the liner.

Furthermore, Applicant has amended claim 1 to recite:

*a rotor assembly having a shaft partially disposed within the liner, the shaft configured to rotate on the surface of the second end of the liner and relative to the liner;*

Applicant respectfully asserts that Nii does not teach or suggest a shaft that rotates on the surface of the liner. Since, as noted above, liner 6 does not have an inner surface at either end thereof,

the shaft cannot rotate on such a surface. Since Nii does not disclose all of the elements of claim 1, Applicant respectfully requests withdrawal of the rejection.

**Remarks regarding 35 U.S.C. § 103**

A. Claims 1, 3, 6, 9-14, 21, and 22 stand rejected under 35 U.S.C. § 103 (a) as allegedly obvious over Usui (U.S. Patent No. 5,924,798) in view of Nii. Applicant respectfully traverses the rejection.

As noted above with respect to the § 102 rejection, amended, claim 1 recites:

*a liner secured within the bore hole, wherein the liner includes a first end, and a second end, wherein the second end includes an inner surface having a hole formed there through;*

Applicant asserts that neither Usui, Nii, nor the combination of the two references discloses or suggests a liner having a second end including an inner surface. Applicant asserts that the elements referred to as the liner in both references (namely sleeve 5b of Usui and bearing 6 of Nii) are tubular elements that have no inner surface at either end. Furthermore, Applicant respectfully asserts that amended claim 1 also recites:

*a rotor assembly having a shaft partially disposed within the liner, the shaft configured to rotate on the surface of the second end of the liner and relative to the liner;*

Applicant respectfully asserts neither Usui, Nii, nor the combination of the two references discloses or suggests a shaft that rotates on the surface of the liner. Therefore, Applicant respectfully asserts that the combination of Usui and Nii does not teach or suggest all of the elements recited in claim 1. Thus Applicant respectfully requests withdrawal of the rejection.

B. Claims 1, 3, and 6-8 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Tanaka (U.S. 2001/0022869) in view of Nii. Applicant respectfully traverses the rejection.

As noted above with respect to the § 102 rejection, amended, claim 1 recites:

*a liner secured within the bore hole, wherein the liner includes a wall, a first end, and a second end, wherein the second end*

*includes an inner surface having a hole formed there through;*

Neither Tanaka, Nii, nor the combination of the two references discloses or suggests a liner having a second end including an inner surface. Applicant asserts that the elements referred to as the liner in both references (namely sleeve 12 of Tanaka and bearing 6 of Nii) are tubular elements that have no inner surface at either end. Furthermore, Applicant respectfully asserts that amended claim 1 also recites:

*a rotor assembly having a shaft partially disposed within the liner,*  
*the shaft configured to rotate on the surface of the second end of*  
*the liner and relative to the liner;*

Applicant respectfully asserts neither Tanaka, Nii, nor the combination of the two references discloses or suggests a shaft that rotates on the surface of the liner. Therefore, Applicant respectfully asserts that the combination of Tanaka and Nii does not teach or suggest all of the elements recited in claim 1. Thus Applicant respectfully requests withdrawal of the rejection.

C. Claims 4 and 5 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Tanaka in view of Nii as applied to claims 1 and 3, further in view of Titcomb (U.S. Patent 5,516,212). The Office Action alleges that it would have been obvious to incorporate a capillary seal between the liner and a tapered section of the shaft taught by Titcomb into the device of Tanaka, in the reliance on the motivation to seal the lubricating fluid between the bearing surfaces. This rejection is respectfully traversed.

Although Tanaka and Nii are discussed more thoroughly above, neither teach the recited elements of “*a liner secured within the bore hole, wherein the liner includes a first end, and a second end, wherein the second end includes an inner surface having a hole formed there through*” or “*a rotor assembly having a shaft partially disposed within the liner, the shaft configured to rotate on the surface of the second end of the liner and relative to the liner.*”

Titcomb (U.S. Patent 5,516,212) provides no suggestion of these elements to one skilled in the art and, thus, fails to cure the deficiencies of Tanaka in view of Nii to include such a liner. Accordingly, for at least the above reasons, Tanaka in view of Nii and in further in view of

Titcomb fails to disclose or suggest each and every feature of claim 1, and those claims depending therefrom. Therefore, Applicant respectfully requests withdrawal of the rejection.

### CONCLUSION

In view of the foregoing, Applicant respectfully submits that claims 1, 3-14, 21, and 22 define subject matter that is patentable over the prior art and in immediate condition for allowance. Further and favorable reconsideration of this application and the issuance of a Notice of Allowance are requested. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 14-1437. Please credit any excess fees to such deposit account.

Respectfully submitted,  
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